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# (12) United States Patent

SEMICONDUCTOR OPTICAL DEVICE

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(54) MANUFACTURE METHOD OF MAKING

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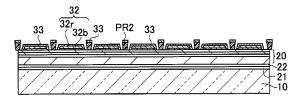
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See application file for complete search history.



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#### (57) ABSTRACT

The semiconductor optical device has a chip of semiconductor lamination having a first semiconductor layer of a first conductivity type having a first surface, a second semiconductor layer of a second conductivity type opposite to the first conductivity type having a second surface, and an active layer sandwiched between the first semiconductor layer and the second semiconductor layer, the chip having side surface including a first side surface which is contiguous to the second surface, forms an obtuse angle with the second surface, extends across the second semiconductor layer and the active layer, and enters the first semiconductor layer, and a cracked surface which is contiguous to the first side surface, a first conductivity type side electrode formed on the first surface, and a second conductivity type side electrode formed on the second surface, wherein in-plane size of the semiconductor lamination is 50 µm or less.

### 11 Claims, 5 Drawing Sheets

